

This Plan has been prepared in support of the DOE/Jefferson Lab VPDES General Permit for Storm Water Discharges of Storm Water from Construction Activities. This working draft will be updated as the details for each project are incorporated.

(Working Draft of)  
**THE DOE/JEFFERSON LAB STORM WATER POLLUTION  
PREVENTION PLAN FOR THE APPLICABLE PROJECTS TO BE  
UNDERWAY STARTING IN  
FISCAL YEAR 2004**

**First Issuance: December 17, 2003**

**Revision 0.1: February 6, 2004**

This Storm Water Pollution Prevention Plan (SWP3) covers 4 projects:

- (1) One Tree Clearing Action, (2) Phase 1 of the North Connector Road, (3) the Northeast Pond and Associated Channels, and (4) the CEBAF Center Phase 1 Addition.

**PROJECT OVERVIEWS**

**1.0     Preparation and Compliance**

Thomas Jefferson National Accelerator Facility (TJNAF or Jefferson Lab) and the Department of Energy (DOE) will comply with the terms and schedule of this Plan on the initiation of any construction activity associated with Phase 1 of the North Connector Road, the Northeast Pond, and the CEBAF Center Phase I Addition projects and associated tree clearing activities that will have begun after December 17, 2003.

**2.0     Signature Responsibility**

Certification of this Plan by the DOE Site Manager and the Jefferson Lab Director is included in Section 6.0. Upon completion and certification of this Plan, which will serve as a working draft, notice of such is to be provided to the Virginia Department of Environmental Quality (DEQ) who will issue the said permit. (Permit No. VAR103277 was issued, refer to 3.5.3.)

**3.0     Project Documentation**

**3.1     Tree Clearing at North Connector Road**

- 3.1.1     DOE/EA-0257, "Environmental Assessment for the Continuous Electron Beam Accelerator Facility, Newport News, Virginia", January 1987.
- 3.1.2     DOE/EA-0257, Finding of No Significant Impact, January 12, 1987.
- 3.1.3     Jefferson Lab CXA-2003-006, December 18, 2003

- 3.2 Phase I of the North Connector Road and Other Activities
  - 3.2.1 DOE/EA-0257, "Environmental Assessment for the Continuous Electron Beam Accelerator Facility, Newport News, Virginia", January 1987.
  - 3.2.2 DOE/EA-0257, Finding of No Significant Impact, January 12, 1987.
  - 3.2.3 DOE CX TJNAF-001-03, September 25, 2003, Categorical Exclusion for Site Work Activities in the CEBAF Center Vicinity at the Thomas Jefferson National Accelerator Facility.
- 3.3 Northeast Pond and Associated Channels
  - 3.3.1 DOE/EA-1384, "Environmental Assessment for the Proposed Improvements at the Thomas Jefferson National Accelerator Facility, Newport News, Virginia", June 2002.
  - 3.3.2 DOE/EA-1384, Finding of No Significant Impact dated July 13, 2002 for the actions evaluated in DOE/EA-1384.
  - 3.3.3 Jefferson Lab DOE CXA pending [draft checklist to SC 11/5/03]
  - 3.3.4 Storm Water Drainage Study CEGG, Final Draft Storm Water Design Study, to City of Newport News in February 2003.
- 3.4 CEBAF Center Addition, Phase I
  - 3.4.1 DOE/EA-1384, "Proposed Improvements at the Thomas Jefferson National Accelerator Facility, Newport News, Virginia", June 2002.
  - 3.4.2 DOE/EA-1384, Finding of No Significant Impact dated July 13, 2002 for the actions evaluated in DOE/EA-1384.
- 3.5 All Projects
  - 3.5.1 Virginia Pollutant Discharge Elimination System (VPDES) General Permit Registration Statement for Storm Water Discharges of Storm Water from Construction Activities submitted on September 3, 2003.
  - 3.5.2 Notice of Intent to comply with the VPDES General Permit for Storm Water Discharges from Construction Activities is to be provided to the DEQ before December 19, 2003.
  - 3.5.3 Permit No. VAR103277, VPDES Storm Water General Permit for Storm Water Discharges of Storm Water from Construction Activities, effective December 22, 2003.
  - 3.5.4 Correspondence from the U.S. Army Corps of Engineers dated July 3, 2003 verifying that there were no wetlands at any of the sites included in this permit.
  - 3.5.5 REMSA, Inc., "Wetland Delineation and Threatened and Endangered Species Survey", August 2001.
  - 3.5.6 Working Drafts of Jefferson Lab EH&S Manual Chapter 6733, Storm Water Management Program and appendices that will outline the Storm Water Pollution Prevention Plan (SWP3) for Construction Activities and the soil erosion and sediment control (E&SC) procedures valid during construction activities. These E&SC procedures currently included in the Jefferson Lab EH&S Manual will hereinafter be referred to as the Procedure.
  - 3.5.7 Reference to the Virginia Erosion and Sediment Control Handbook in the Procedure.

#### 4.0 The Jefferson Lab Site

Jefferson Lab is located in central Newport News, Virginia. This institution performs physics research for the DOE and is situated in the city's Jefferson Center for Research and Technology.

The Jefferson Lab site of about 214 acres is located in the middle of a highly developed commercial/industrial area. Newport News is bounded on the east by York County and the city of Hampton, on the north by James City County and the city of Williamsburg; and, on the south by the Hampton Roads waterway.

Jefferson Avenue serves as the west site boundary. The city's ARC building and SCOT Road border the DOE site on the north. SCOT Road, city and SURA property, and Canon Boulevard border the site on the northeast and east. The south boundary adjoins city property that partly serves as a local storm water collection area.

#### 5.0 Project Overviews

##### 5.1 Site Descriptions

##### 5.1.1 **Tree Clearing at the Work Site for the North Connector Road and Planned Construction Lay down/Geothermal Area**

###### Nature and sequence of activity:

This activity involves the clearing of trees and brush and removal of stumps at identified locations on the Jefferson Lab site. The subcontractor will remove trees and process those suitable into lumber or other wood products. The stumps will be removed and disposed of in a landfill. The voids will be filled in with local disturbed earth and leveled by the subcontractor. As identified necessary to minimize hazards, Jefferson Lab will bring in clean topsoil and further level off voided areas. Seeding will be performed as identified later in this plan. Specific sequencing of activities is provided in Appendix A (See note at end of 5.1.1).

###### Disturbance:

Area 1: The Phase 1 of the North Connector Road, which includes a storm channel relocation, and an adjacent site at a planned subcontractor laydown/geothermal grid area are designated Area 1. The area affected by this tree clearing activity is about 3 1/2 of the 4 acre total area. The property is located just north of the main office building, CEBAF Center, on the north portion of the DOE property.

Area 2: The Northeast Pond and some of the associated storm water channels that encompass Area 2 will be constructed at a different location than evaluated in Revision 0.0. Information will be incorporated into Section 5.1.3 below at a later date.

Runoff coefficients and existing vegetation:

Area 1, the North Connector Road/planned laydown site is primarily a pine-oak forest with only minimal undergrowth. The current composite curve number, a value used to determine the percentage of runoff for a drainage sub-basin, for Area 1 is 79. Area 1 is located in surface drainage area 10B. (The composite curve number (CN) takes into account the presence of impervious areas, wooded areas, and open space. The larger the CN the higher the amount of runoff can be expected after a storm.) There will be about a 2% increase in runoff at the completion of this tree clearing project.

The disturbance at Area 2 will be addressed later in Section 5.1.3.

As only minimal surface impact is expected from this activity, there should be only selective need for E&SC (erosion and sediment control) measures. Jefferson Lab will manage any identified E&SC measures as described in Appendix A.

Potential Pollution Sources and Storage Areas:

Area 1 has only minimal pollution potential from this action as noted here and below. Buildings and trailers with roof drains and small amounts of air conditioning condensate are in the Area 1 vicinity. These sources are not expected to be a concern with this very short-term project. There are no external storage areas that could be a source of pollution. There are no nearby industrial activities that discharge water to surface waters.

One source of storm water pollution for Area 1 could be from fuels or oil associated with subcontractor vehicles and cutting equipment and tools. A second source of pollution will be erosion and sedimentation from land disturbance from grubbing and equipment passage. Specific measures to minimize impacts will be identified in Appendix A, the job-specific SWP3 that is to include the project E&SC Plan or plans.

Name of Receiving Waters and Ultimate Receiving Waters:

Note that there are no wetlands nor is any of the property at either site situated in a 100-year floodplain. Both areas are in flood zone C on area FEMA maps.

Area 1 drains to local storm channels in the project area and the adjacent CEBAF Center vicinity and then ultimately to Brick Kiln Creek. The retention pond noted in 5.1.3 will eventually intercept all storm flow from this drainage area.

Site Maps:

The Area 1 map, which include all permit-required information such as contours and clearing limits, is provided in Appendix A.

*Refer to Appendix A for the subcontractor-specific SWP3 for this project, which will include E&SC measures. For this project, Jefferson Lab will be handling the E&SC factors, so the Facilities Management Director has signed off on the Appendix.*

[Appendix A has been prepared by E. Winslow, with assistance from L. Even. It was based on the subcontractor-provided Means and Measures Plan. It was signed off on January 23, 2004.]

#### **5.1.2 Phase 1 of the North Connector Road and Utility and Storm Channel Relocation Work**

##### Nature and Sequence of Activity:

This activity involves the construction of Phase 1 of the North Connector Road that includes utility and storm channel relocation work for the full length of the future road. It affects about 2 acres of land and is a portion of Area I of the tree clearing project noted above. The subcontractor will prepare the site (clearing and grubbing will be complete), install underground piping, manholes, and storm drains. The road base will be prepared and new surface channels will be constructed prior to filling in the existing surface channels that will be served by buried piping. Specific sequencing of activities will be provided in Appendix B, which will reference or include the subcontractor's E&SC Plan. See the note regarding Appendix B at the end of 5.1.2. The phase 1 roadway will be completed, including curbing and final paving, at a later date, with no new area being affected.

##### Disturbance:

The roughly 2 acres of the Phase 1 road and drainage channel project are situated on the property just north of the main office building, CEBAF Center, located on the north portion of the DOE property. All activity (roughly a 40' wide swath between Lawrence Drive and the CEBAF Center parking area) will be well within DOE property limits. There is a City of Newport News utility easement corridor to the south that serves the adjacent SURA property to the east and a road and utility easement that runs adjacent to nearby Jefferson Avenue on the west.

##### Runoff Coefficients and Existing Vegetation:

The majority of this area is oak-pine forest with some of the area grassed and a small amount paved. A storm water channel, which provides primary area drainage, traverses the area and flows west to east through the site following the general topography which slopes from about elevation 37.5' to 31.5'. This channel flows out of this area and eventually flows east to Brick Kiln Creek. The current CN for drainage area 10B is 79. There will be a notable decrease (about an additional 30%) in retention in this drainage area as about 30% of the land will become impervious with this contract. Retention will be reduced as soon as earthmoving operations begin. This increased storm flow will be managed at the new Northeast Pond, to be constructed later in 2004, and is discussed in 5.1.3.

The soil types and erosion-related concerns will be discussed in Appendix B, if determined relevant for the project.

Potential Pollution Sources and Storage Areas:

The potential for pollution is described in the Area 1 portion of 5.1.1 above. It is a relatively short-term project, with only minimal concern regarding the surface discharge from local roof drains and the air conditioner condensate from the nearby CEBAF Center. Construction and construction vehicles are also potential pollution sources. The major source of pollution could result from erosion and sedimentation from land disturbance from the large amount of excavation that will be performed. Specific measures to minimize impacts from these sources will be identified in Appendix B, the project-specific SWP3 that is to include or reference the subcontractor-provided Environmental Protection Plan which will include the job-specific E&SC Plan.

Though there are no concerns with the environmental condition of the soil, Jefferson Lab will analyze at least one sample of any soil that will be removed for disposal at an offsite landfill.

Name of Receiving Waters and Ultimate Receiving Waters:

Note that there are no wetlands in this area. No parts of this project site cross into the 100 year floodplain of Brick Kiln Creek, though it is in a flood zone C.

All surface flow goes to local storm channels that pass just to the north of CEBAF Center and then eastward and ultimately to Brick Kiln Creek. All impacts will be to this watershed. The Lab property just to the northwest and west of the area to be disturbed flows to Deep Creek and the James River. No Deep Creek 100-year floodplain is affected and there will be no disturbance to that watershed's surface flow.

The storm water and other surface discharges from this drainage area will eventually be intercepted at the retention pond noted in 5.1.3.

Site Map(s):

The site maps, which include all permit-required information such as contours and clearing limits, are provided in Appendix B.

*Refer to Appendix B for the subcontract-specific SWP3 for this project. Jefferson Lab will prepare the SWP3, and use the subcontractor-provided Environmental Protection Plan (EPP) (and included ES&C Plan) for preparing the SWP3.*

*The prime subcontractor, and any subcontractors, will provide the necessary permit certifications within the EPP Plan, or as otherwise identified.*

[Appendix B is to be prepared by S. Chandra, with assistance from L. Even. It will be based on the subcontractor-provided EPP and included E&SC Plan.]

**5.1.3 Northeast Pond Site Description**

*The location for the retention pond is being evaluated. This section of the plan will be rewritten as the site and design are finalized.*

#### Nature and Sequence of Activity:

This activity involves the construction of the Northeast Pond and associated storm water channels on the northeast edge of the DOE property, about 2 acres of which is now owned by SURA. The SURA land will be transferred to the DOE prior to the start of any activity (beyond the tree clearing) in this area. All new storm water channels will be located on DOE property, with some near the DOE property line. The pond itself will be built on in Area 2 of the tree clearing project noted above.

The subcontractor will prepare the site (clearing and grubbing will be complete), install identified E&SC measures, excavate and remove earth to elevations required, construct the pond, finish grade, and provide temporary seeding to stabilize the area. Specific sequencing of activities is to be provided in the future Appendix C (see note at the end of 5.1.3), which will include or reference the subcontractor's EPP and E&SC plans. Jefferson Lab will maintain the area, including any necessary seeding, after construction is complete.

#### Disturbance:

The construction of the pond and channel project will affect about seven acres of land near the northeast site boundary, located roughly 1200 feet southeast of the SURA Residence Facility. The pond construction itself will affect about six acres, including that for a temporary truck access route, and about one acre for the related new local storm channels. All activity, except for some minor tie-ins with downstream drainage channels that are on the SURA property, will be within the DOE property limits.

The proposed site is being evaluated in late 2003 to validate whether or not the area is free of legacy contaminants. Upon obtaining suitable satisfactory results, the land transfer process from SURA to DOE will commence. If the site conditions are not suitable to meet DOE criteria then the pond location will be altered to be situated fully on existing DOE property.

Undeveloped SURA property will remain to the northeast. Other nearby neighbors to the north are: SURA that has both recently undisturbed land and the SURA Residence Facility; and the school bus station that is operated by the City of Newport News.

#### Runoff Coefficients and Existing Vegetation:

The roughly 7 acres to be disturbed for the Northeast Pond site, Area 2 in 5.1.1, contain an oak-pine forest with moderate undergrowth. The adjacent area is open grassland. There are no paved areas, and a small gravel access road leads to the pond vicinity. There are a number of storm channels present in the area that follow the general topography which slopes to the east (from the west) and to the south and east (from the north). Local elevations vary from about 32.5' to 29.5'.

The CN for Area 2, before the tree clearing identified in 5.1.1, are 66 (the portion in surface drainage area 30B) and 70 (the portion in drainage area 40A). Both drainage basins serve both DOE and SURA land. There will be a large improvement in the storm water retention factor at the completion of this project.

The new pond will have a bottom elevation of roughly 23'. It will provide retention capability and improve water quality in manners that will minimize any impacts from a number of planned disturbances in upstream areas, including the road and addition projects described herein.

There will be significant impact during construction from this activity, and E&SC measures and sequencing will be spelled out in Appendix C. There will be no paved or impervious surfaces involved in this project. The soil types and erosion-related concerns will be discussed in Appendix C, if determined relevant for the project.

Potential Pollution Sources and Storage Areas:

As this pond will be located in an undeveloped area, the pollution potential is limited as there are no industrial sources in the vicinity. Refer to the discussion for Area 2 in 5.1.1 above. It is, however, a pond that will collect and process all waters and pollutants that arrive from at least four drainage areas. At least two of these areas are fairly well developed and have roof drain and air conditioning condensate discharges. These developed areas are also treated periodically with various herbicides and fertilizers. Another source of storm water pollution for this area could be from fuels or oil associated with subcontractor vehicles. A third potential source will be from erosion and sedimentation from land disturbance from the large amount of earth moving operations and equipment passage. Specific measures to minimize impacts will be identified in Appendix C, the job-specific SWP3 that is to include a job-specific E&SC Plan.

Due to new disposal restrictions, Jefferson Lab will analyze at least one sample of any soil that will be removed for disposal at an offsite landfill.

Name of Receiving Waters and Ultimate Receiving Waters:

Note that there are no wetlands in this area. No parts of this project site cross the 100 year floodplain of Brick Kiln Creek, though it is in flood zone C.

Small tributary channels and ditches meander through the site from the northwest to the east and southeast that follow the general contour of the land. It doesn't appear that there are any 'natural' streambeds, though some have become such over time. These channels flow off the site, to SURA property, and beyond the SURA property to a larger tributary that flows under Canon Boulevard. The water flows through a double culvert at Canon, and then east and south to Brick Kiln Creek. It is about 0.7 miles from the proposed pond exit to Brick Kiln Creek.

As this project is a retention pond, it will provide about xx acre-feet of storage. This pond will provide compensatory storage for some previous site disturbance and other future projects described in DOE/EA-1384, see references above. The design of this new storm water retention pond, along with another pond in the overall watershed area will keep discharge flow from exceeding about 213 cubic feet per second (cfs) for a 100 year storm at the culverts at Canon Boulevard. This is well under the 374 cfs that could be possible if no ponds are utilized to

manage the storm water.



Site Maps:

The site maps, which include all permit-required information such as contours and clearing limits, are provided in Appendix C.

*Refer to Appendix C for the subcontract-specific SWP3 for this project. Jefferson Lab will prepare the SWP3, and use the subcontractor-provided Environmental Protection Plan (EPP) (and included ES&C Plan) for preparing the SWP3.*

*The prime subcontractor, and any subcontractors, will provide the necessary permit certifications within the EPP Plan, or as otherwise identified.*

[Appendix C is to be prepared by S. Chandra, with assistance from L. Even. It will be based on the subcontractor-provided EPP and included E&SC Plan.]

#### **5.1.4 CEBAF Center Phase 1 Addition Site Description**

Nature and Sequence of Activity:

This activity involves the construction of the 3-story Phase 1 Addition to CEBAF Center. The project includes tree clearing and grubbing in the immediate building area, some demolition at the existing building, road saw-cutting and restoration, new building construction, utility installation (includes a chilled water supply and return line that extends to the Test Lab and a geothermal grid in Area 1, discussed in 5.1.1 above). This project affects about 3 acres of land and overlaps with a portion of Area 1 of the tree clearing project. Specific sequencing of activities will be provided in Appendix D (see note at end of 5.1.4), which will reference or include the subcontractor's E&SC Plan.

Disturbance:

The roughly 3 acres of the Phase 1 CEBAF Center addition are situated on the DOE property in the northern part of the site. The building addition construction will be performed on the northeast corner of the existing CEBAF Center (about 1.5 acre). The well grid (about 2 acres) will be installed in the area to the northwest of the existing building. In addition, the chilled water utility corridor (about 10' x 1200', about 0.3 acres) will extend between the Test Lab and the new addition.

There is a City of Newport News utility easement corridor to the north of the new addition (being relocated in December 2003 or January 2004 to that location). It serves the adjacent SURA property to the east. There is also a road and utility easement that runs adjacent to nearby Jefferson Avenue on the west side of the geothermal grid site.

Runoff Coefficients and Existing Vegetation:

Of the roughly 3 acres to be disturbed for the Phase 1 Addition, only the immediate 1+ acre will contain an oak-pine forest with minimal undergrowth. Immediately adjacent to the building is an existing paved driveway. The rest of the land in the immediate building area is mowed grass. The drainage channel (as relocated in 5.1.2) that serves the existing area collects and moves water from

west to east, and eventually flows to the pond described above. Local elevations vary from 35' to 38'. The CN is 79 for surface drainage area 10B. All drainage stems from DOE land. There will be a significant decrease in the storm water retention capability for the 10B sub-basin, since so much area will become impervious at the completion of this portion of the work.

The roughly 2 acre geothermal grid site will have been cleared and grubbed as noted in 5.1.1. At the geothermal well grid, there are some small tributary channels that meander through the site from the northwest to the southeast that meet the existing main channel. No part of this site is paved. Local elevations range from 34.4' to 36'. The CN is 79 for the 10B sub-basin prior to tree clearing. All drainage stems from DOE land. As this area will support construction traffic during the building construction, there will be a notable decrease in the storm water retention factor during construction and after completion of this portion of the work.

The site for the chilled water lines is highly developed. It primarily consists of grassed areas that have a few trees and bushes. There are two paved roadways that will have to be crossed. Trees and bushes will be relocated by Jefferson Lab prior to the start of this portion of the project. There are storm channels in the area that follow the general topography which lead to drainage channels or devices that allow the water to flow to the east. Local elevations vary from about 33' to 39.3'. The CN is 79 for the overall surface drainage areas affected, 10B and 30A. All drainage stems from DOE land. There will be only a minimal decrease in the storm water retention factor at the completion of this portion of the work as the project area is already developed.

The overall project will result in a significant impact from all of the construction activity, and E&SC measures and sequencing will be spelled out in Appendix D. The soil types and any related concerns will be discussed in Appendix D, if determined relevant for the project. A large portion of this area will become impervious and the rest will have reduced retention capability at the completion of this action. The resultant increased flow is to be accounted for at the Northeast Pond presented in 5.1.3.

#### Potential Pollution Sources and Storage Areas:

The potential for pollution is described in the Area 1 portion of 5.1.1 and in 5.1.2 above. It is a long-term project, and there will be major concerns regarding the surface discharges from local roof drains and the air conditioner condensate from the adjacent CEBAF Center, and from contractor storage areas. Construction and construction vehicles are also potential pollution sources. The major potential source of pollution is from erosion and sedimentation from land disturbance from the large amount of excavation that will be performed. Specific measures to minimize impacts from these sources will be identified in Appendix D, the project-specific SWP3 that is to include or reference the subcontractor-provided Environmental Protection Plan which will include the job-specific E&SC Plan.

Though there are no concerns with the environmental condition of the soil, Jefferson Lab will analyze at least one sample of any soil that will be removed for disposal at an offsite landfill.

• Name of Receiving Waters and Ultimate Receiving Waters:

Note that there are no wetlands in this area. No parts of this project site cross the 100 year floodplain of Brick Kiln Creek. The Lab property just to the west of the area to be disturbed flows to Deep Creek and the James River. No Deep Creek floodplain is affected and there will be no disturbance to this watershed's surface flow.

Refer to the discussion in 5.1.2 above for more information about the drainage near CEBAF Center and at the geothermal grid site. For the area at the chilled water corridor, there are a few large channels running north and south, with flow going to the closest west-east channels or buried pipes. The man-made channels follow the general contour of the land. These channels flow to the east and eventually to SURA property, and beyond the SURA property to a larger tributary that flows under Canon Boulevard. The water flows through a double culvert at Canon, and then east and south to Brick Kiln Creek. It is about 0.7 miles from the proposed pond exit to Brick Kiln Creek. The storm water and other surface discharges from the affected drainage areas will eventually be intercepted at the retention pond noted in 5.1.3.

Site Map(s):

The site maps, which include all permit-required information such as contours and clearing limits, are provided in Appendix D.

*Refer to Appendix D for the subcontract-specific SWP3 for this project. Jefferson Lab will prepare the SWP3, and use the subcontractor-provided Environmental Protection Plan (EPP) (and included ES&C Plan) for preparing the SWP3.*

*The prime subcontractor, and any subcontractors, will provide the necessary permit certifications within the appendix or EPP Plan, or as otherwise identified.*

[Appendix D is to be prepared by D. Brand, with assistance from L. Even. It will be based on the subcontractor-provided EPP and included E&SC Plan.]

## 5.2 Project Planning Organization

The work for these civil construction projects is being arranged so that it can be performed in a logical schedule sequence to facilitate the individual project start and completion dates.

1 contract – Tree removal at: the future North Connector Road/storm channel rerouting and at the geothermal well sites.

1 contract – Construction of Phase 1 of the North Connector Road and storm channel rerouting for the full length of the Phase 1 Road, the future road

extension in the Trailer City vicinity, and at the geothermal well area. The project includes excavation, demolition of pavement, the installation of buried storm channels, storm manholes, the construction of the Phase I road subbase, and a surface gravel course. The final surface drainage structures and the curbs and road surface will be handled in a future project.

- 1 contract – Construction of the Northeast Pond and associated channels: tree removal, excavation that includes the construction of temporary drainage channels as identified, and pond and final drainage channel construction.
- 1 contract – Construction of CEBAF Center Phase I Addition: tree removal at the building site; demolition of pavement and portion of existing building; construction of normal office/computer center building and providing functions including HVAC systems, conventional power, mechanical equipment room, toilets, water and sewer connections to existing lines; and geothermal well grid and associated piping back to new addition.

The civil construction project elements have been scheduled in a logical sequence as well as by facility function or type of construction work involved. The specific project schedules are provided in the project's appendix. This construction scenario will probably not be identical with the ultimate scope of the actual subcontract packages nor is the sequence of work inflexible. Funding constraints, procurement strategies, required design periods or changing requirements of the technical parameters of each of the projects will all influence the ultimate design and construction packages and the work sequence. The only project that will have a detailed work breakdown will be the CEBAF Center Phase I Addition. This work breakdown will be incorporated into this SWP3 at a later date.

All work to be done is typical of conventional construction.

### **Phase 1 - Site Preparation**

- Tree clearing at Area 1 – marking of areas not to be disturbed, protection of trees to remain, tree removal and clearing and grubbing of stumps, removal of debris from the site, leveling disturbed areas.

If construction does not follow up in less than 60 days in areas disturbed by the tree cutting, disturbed areas will be leveled and seeded and/or mulched.

### **Phase 2 – Construction**

- Road and Drainage Channel – construction entrance, installation of utility casing, crushed stone road base, drainage structures, excavation for both a new storm channel and storm water piping, and upper gravel surface. Temporary seeding and landscaping will follow. Paving and drainage structure completion will occur at a later date.
- Northeast pond and channels – survey monuments, construction entrance, access road, temporary storm channel diversions, excavation, grading, and landscaping for pond and channels. Seeding and landscaping will be performed.
- CEBAF Center Phase I Addition – utility connections including new geothermal grid and chilled water supply and return lines, HVAC systems, building foundations,

equipment pads, an elevator, computer center support system, transformer, emergency generator, and area seeding and landscaping.

### 5.3 General Project Scope

The civil construction for the projects noted includes construction of a storm water retention pond, a 59,000 square foot building addition, a geothermal well grid, and site work such as to provide a connector road, underground and surface storm drainage, and utilities and services to accommodate the needs of the new building that include supporting an expanded site computer center.

Only the Kiln Creek drainage basin will be disturbed by construction activity under these projects. The on-site drainage channels leave the DOE and SURA properties and flow continues eastward through the Canon property and Route 64 until it reaches Brick Kiln Creek (about 0.7 miles beyond Canon Boulevard).

Drainage: At the completion of all of the projects noted, there will be no unaccounted for adverse effects on downstream areas beyond DOE property as the new pond will handle all additional area storm flow. Design basis: 100 year storm.

Erosion and Sediment Control: The design shall conform to the Virginia Erosion and Sediment Control Handbook, as noted in contract specifications for each project.

### 5.4 Project Timetable for Soil Disturbing Activities

The conventional construction has been planned to permit completion of the utility and drainage relocation work and the new retention pond before the major activity at the CEBAF Center Phase 1 Addition gets underway in spring 2004.

There are no constraints on facility operations, including with any accelerator operations and computer center relocation, with these projects. Note that the civil work will be completed in a sequence which corresponds to the use and occupant needs.

The current list is a preliminary construction work sequence.

Project No./Name	Activity	Estimated Start Date	Projected Finish Date
Northeast Pond and associated channels	Land transfer	No Longer Applicable	No Longer Applicable
	Tree Clearing	~5/04	~5/04
	Construction	~5/04	~7/04
North Connector Road and Relocation Work	Tree Clearing	2/04	3/04
	Construction	3/04	4/04

CEBAF Center Phase 1 Addition	Tree Clearing	4/04	4/04
	Building Construction	5/04	5/06
	Chilled Water Line Construction	TBD	TBD
	Geothermal System Construction	TBD	TBD

Construction Milestones:

1. Tree Clearing at Area 1 – January/February 2004
2. Commence construction of Road – February/March 2004
3. Begin pond construction, including any temporary retention areas – May/June 2004
4. Begin construction of CEBAF Center Phase 1 Addition – May 2004
5. Complete construction of pond – August 2004
6. Complete paving work at Road – fall 2004
7. Beneficial occupancy of the Addition – May 2006

As the various work packages are designed and readied for construction, erosion and sediment control structure and stabilization area interfaces with previous or current projects will include taking into account the terms and conditions of this permit.

#### 5.5 Project Site Surface Disturbance

The total affected area of the three projects will be about 15 acres of the 214 acre DOE site. The estimated area to be disturbed is 12 acres.

#### 5.6 Runoff Estimates

The initial runoff values for the Jefferson Lab site were provided from the storm water study performed in 2001. The runoff curve numbers for the north part of the DOE site, Watershed Area I, as used to determine drainage characteristics are:

<u>Reach</u>	<u>CN</u>
10A	69
10B	79
20	74
30A	79
30B	66
40A	70
40B	85
80	74

No projected values for the runoff curve numbers are provided herein.

The runoff characteristics at the completion of the construction for all identified projects will be in an improved state when compared to the initial conditions. With the addition of the retention pond, storm flow will sustain longer retention times prior to arriving at the city drainage structures at Canon Boulevard. The design of the retention pond and related drainage channels should slow flows and allow sediment movement capacities to be reduced and improving the water quality at the site boundary.

At the completion of these projects, there will be about 20,000 sq. ft. of roof area (CEBAF Center Phase 1) and 125,000 sq. ft. of bituminous paved areas (Connector Road and CEBAF Center vicinity). Adding in miscellaneous concrete areas brings the impervious surface total to about 4.0 acres, including planned future paving of areas.

4.0 acres impervious  
5.0 acres pond  
3.0 acres mowed or vegetated  
12.0 acres affected

#### 5.7 Existing Data Describing Soils Or Quality Of Discharge

Site geologic and hydrogeologic conditions were investigated and reported by Malcolm Pirnie in a 1995 Hydrogeologic Review. An area soil map is available from the city and was used to perform a storm water drainage study in 2002 by CEGG Associates LC. *[A copy of the soil map should be obtained.]*

#### 5.8 Project Maps

- Area USGS Map
- Site topographic map highlighting the projects subject to this General Permit.
- CEGG Drainage area map
- Area Soil map

Overall site maps indicating wells, topographic information, and wetlands are referenced in the Procedure.

As each work package is developed, detailed drainage plans, actual limits of disturbance, erosion and sediment control and stabilization methods and locations, and storm water discharge locations will be produced and incorporated into this Plan or in the appropriate appendix.

#### 5.9 Storm Water Controls

Refer to the basic principles defined in the Procedure. These items will be addressed for each project, and can be included in the drawings and specifications and/or in the subcontractor's Environmental Protection Plan, if required, which will include the job-specific Erosion and Sediment Control Plan.

#### 5.9.1 Erosion and sediment controls

- Stabilization practices. Specific stabilization practices will be developed for each of the jobs as the construction drawings are prepared. The practices that will be incorporated are those specified in the Virginia Erosion and Sediment Control Handbook and in the Procedure.
- Structural practices. Specific structural practices will be developed for each of the jobs as the construction drawings are prepared. The practices that will be incorporated are those presented in the Virginia Erosion and Sediment Control Handbook and in the Procedure.

#### 5.9.2 Storm water management

Measures that will be installed during the course of each job that will remain in place to manage storm water flows will be detailed in the Plan under the appropriate job heading or appendix. Alternatives that were considered for each job will also be described, if applicable.

The overall storm water management plan through the course of each of these projects will be to minimize or reduce the passage of pollutants into the local water courses. At the completion of the overall project the following management measures will have been incorporated into the design.

- The completion of temporary retention measures prior to either or both the paving at the North Connector Road or the groundbreaking at the CEBAF Center Addition.
- The installation of a new 5 acre dry retention pond. By the time of the full groundbreaking for the CEBAF Center addition, the retention pond should be functioning to offset that area disturbance.

The functioning drainage characteristics during the sequence of construction will be of equal or improved quality when compared to the original site conditions.

#### 5.9.3 Other controls

No solid materials shall be discharged to waters of the State.

Compliance will be made with all codes and regulations noted in the contract specifications and the terms of the subject General Permit.

#### 5.9.4 Approved State or Local plans

The management practices and controls defined in this plan are all taken from State regulations and documents. No other local documents or plans apply to work activities on this project.



#### 5.10 Maintenance

General maintenance responsibility of erosion and sediment control measures shall be assigned within construction documents and will comply with any applicable permit terms and conditions.

Responsibility: The Subcontractor shall maintain all erosion and sediment control measures in a functional condition through completion of the work. Any area not stabilized at subcontract completion that was not the responsibility of the Subcontractor will be maintained by the Jefferson Lab Facilities Management section.

Maintenance Plan: A Maintenance/Inspection job-specific document will be created containing the following information:

- (a) Identify all of the areas/measures that will be inspected and maintained.
- (b) Provide an inspection schedule for each area/measure.
- (c) List the typical maintenance procedures for each measure.
- (d) Describe the procedure to follow if additional repair is required; e.g., who will be responsible or who to call.
- (e) Provide forms and instructions for record keeping practices.
- (f) List the names of personnel assigned to each task.
- (g) Indicate what types of training employees will need to be able to perform the job.

#### 5.11 Inspections

General inspection responsibility of erosion and sediment control measures shall be assigned within construction documents and will comply with any applicable permit terms and conditions.

Subcontractor (or Facilities Management if applicable) responsibility: Refer to Maintenance above. A daily visual inspection program of all control measures shall be implemented. The weekly inspection shall be documented. The Subcontractor shall maintain a field log of the weekly inspections and submit a copy of the log to the Subcontracting Officer's Technical Representative (SOTR) at the end of each week through completion of the work. Particular attention shall be given to facilities after each rainfall.

Things to look for during inspection:

- (a) Whether or not the measure was installed/performed correctly.
- (b) Whether or not there has been damage to the measure since it was installed or performed.
- (c) What should be done to correct any problems with the measure?

Jefferson Lab responsibility and quality assurance: Excavation, fill, stabilization and installation of erosion and sediment control devices shall be subject to inspection by the SOTR. He/she shall carry out the general inspection of the measures to verify compliance of work with the subcontract drawings and specifications and to ensure the achievement of the intents and purposes of the devices.

#### 5.12 Non-Storm Water Discharges

Job-related discharges will be identified for each specific job and addressed in construction documents to meet any Agency requirements. These could include the following. Refer to the respective appendix for more items.

- (a) Use of water for dust control at gravel roads.
- (b) Irrigation of seeds or plants to ensure survival and soil stabilization.

#### 5.13 Additional Requirements for Storm Water Discharge from Industrial Activities Other than Construction

Jefferson Lab will evaluate any non-construction activities and define precautions or restrictions as applicable.

#### 5.14 Contractor and Subcontractor Responsibility

The overall contractor is Southeastern Universities Research Association Inc. (SURA). For the overall scope of these projects, the subcontractor that will be responsible for the erosion and sediment control measures for each particular job will be identified in this Plan. An authorized representative from the contracting and subcontracting firms will sign this document certifying compliance with the VPDES General Permit conditions.

### 6.0 Subcontractor and Jefferson Lab Certifications

Contractor and Subcontractors will be identified in the project specific appendix.

Certification that Jefferson Lab and the Department of Energy Site Office agree to comply with permit terms is provided on the following page.


Subcontractor (and sub-sub contractor) certification, which could also be Jefferson Lab's Facilities Management Department, is documented in the project specific appendix.

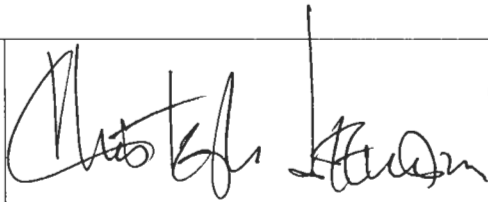
*See Appendix A for the SWP3 for the tree clearing, Appendix B for the pond, Appendix C for the road, and Appendix D for the CEBAF Center addition.*

## DOE/JEFFERSON LAB CERTIFICATION PAGE

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*This is as cited in Part III, Section K.4 of Permit No. VAR103277.*

Department of Energy Thomas Jefferson National Accelerator Facility Site Office 12000 Jefferson Avenue, MS 12F Newport News, VA 23606 (757) 269-7140	 James Turi DOE Site Office Manager	2/27/04 Date
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Thomas Jefferson National Accelerator Facility 12000 Jefferson Avenue, MS 12C Newport News, VA 23606 (757) 269-7552	 Christoph Leemann Jefferson Lab Director	2/27/04 Date
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Note: Subcontractor or Facilities Management Certifications will be provided in the respective appendix to this Plan.